

## HYDROGEL PATCH

### Abstract of the Disclosure

A hydrogel patch is disclosed which is comprised of a polymeric material which forms a gel with water with the material being present in an amount of about 0.5% to 40% by weight based on the weight of the patch. Electrical conductivity of the water is increased by the addition of an electrolyte. The patch comprises an enzyme which is capable of catalyzing a reaction with a biomedically important molecule such as glucose. Glucose drawn into the patch undergoes a reaction with the aid of the enzyme and the hydrogen peroxide released flows through the electrically conductivity of the water and may react at an electrode surface to generate a signal related to the amount of glucose entering the patch. The patch is also preferably comprised of a buffer which maintains the pH of the patch in the range of from about 3 to 9, and may be further comprised of a cross-linking agent, a biocide, a humectant, and a surfactant. The patch is preferably in the form of a thin (5  $\mu\text{m}$  - 50 mils), flat circular disc (0.5 to 10  $\text{cm}^2$  of area) which will conform to the contours of human skin and may have a non-woven fabric embedded therein and removable release liners on each surface.